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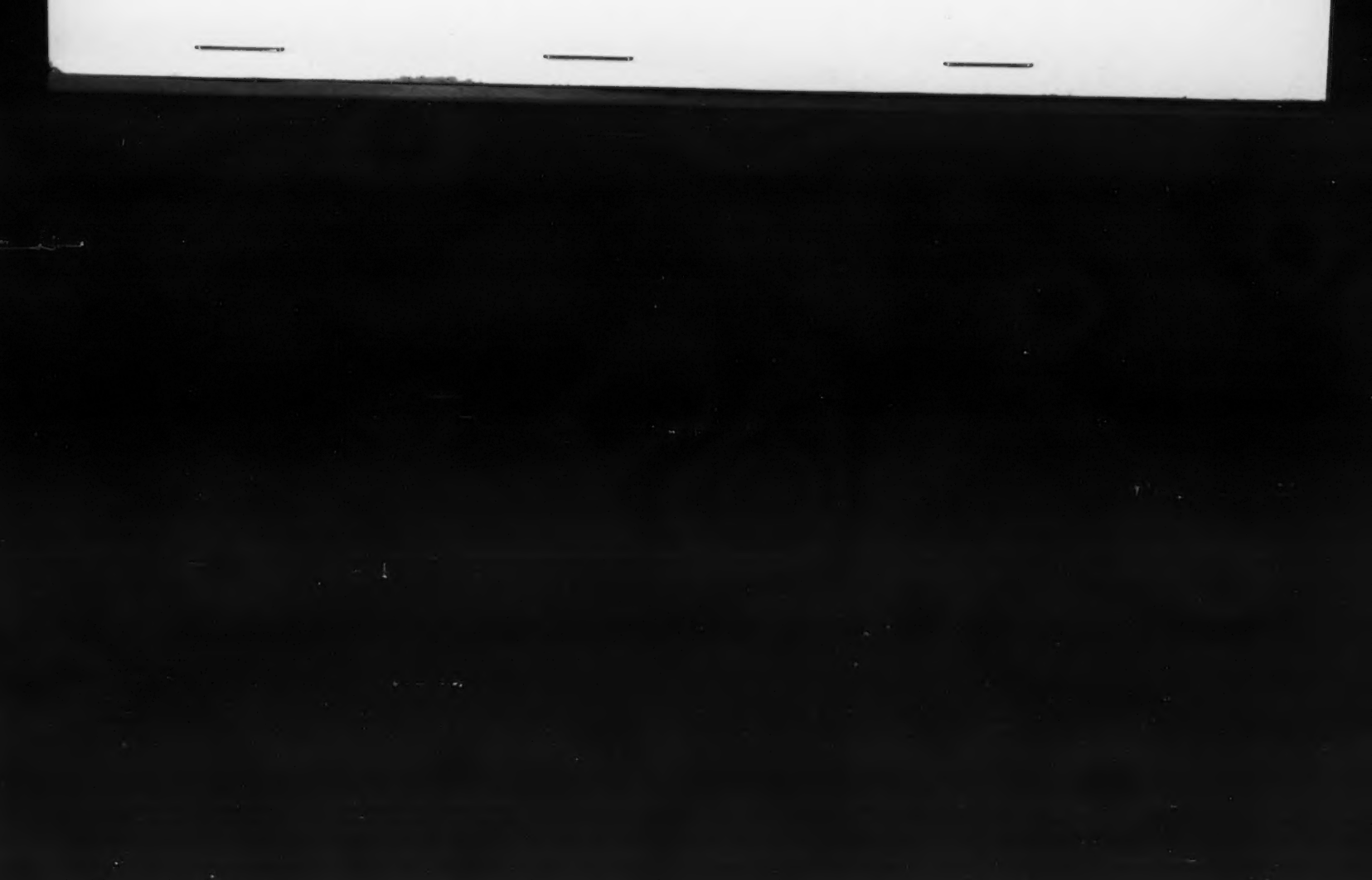
STATED MEETINGS

Of the Entomological Section of The Academy of Natural Sciences of Philadelphia, and of The American Entomological Society will be held at 7.30 o'clock P. M. on the following dates during 1924: January 24, February 28, March 27, April 24, May 22, September 25, October 23, November 20, and Dec. 8.

Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

The printer of the NEWS will furnish reprints of articles over and above the twenty-five given free at the following rates: One or two pages, twenty-five copies, 35 cents; three or four pages, twenty-five copies, 70 cents; five to eight pages, twenty-five copies, $1.40; nine to twelve pages, twenty-five copies, $2.00; each half-tone plate, twenty-five copies, 30 cents; each plate of line cuts, twenty-five copies, 25 cents; greater numbers of copies will be at the corresponding multiples of these rates.



CHARLES OBERTHUR.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA

VOL. XXXV OCTOBER, 1924 No. 8

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CHARLES OBERTHUR.

(Portrait, Plate VII.)

CHARLES OBERTHUR, President du Conseil d'Administration de la Societe Anonyme des Imprimeries Oberthur, Ancien Maire de Monterfil, Ancien Adjoint au Maire de Rennes, President honoraire de la Chambre de Commerce de Rennes, Membre de la Societe Entomologique de France, Chevalier de la Legion d'honneur, Commander de Saint-Gregoire-le-Grand and a very distinguished Entomologist, died June first at his home 36, faubourg de Paris, Rennes, France.

Monsieur Oberthur was one of the greatest Lepidopterists the world has produced and his death has removed a student who was constantly contributing papers and books of the utmost value to science. He possessed a marvellous collection which ranked among the greatest extant.

He had a profound regard for the value of illustrations and carried this idea out during a long life time, having published

thousands of admirable illustrations by artists of the very highest ability. His studies probably began about 1864 and he published many papers in the various European journals devoted to such subjects, a total of more than fifty up to the year 1900.

In 1876 was commenced the superb work entitled *Etudes d'Entomologie,* with numerous colored figures, describing new and little known Lepidoptera from many parts of the world. This was continued until May, 1896, part XXI, and was kept up in the same sumptuous manner as in the beginning. The name of the publication was changed to *Etudes de Lepidopterologie Comparée,* with Vol. 1, 1904, and the last installment received was part I of volume XXII, devoted to the genus *Agrias,* with eleven plates and thirty-three beautiful figures.

M. Oberthur took an intense interest in the variation of the Lepidoptera and published many figures showing these variations, a notable example being *Observations sur la variation des Heliconia vesta et thelxiope,* with ten plates and 120 colored figures.

In *Etudes de Lepidopterologie Comparée,* Fascicule XI, bis, appeared an interesting study of the grand Lepidoptera of Australia, genera *Coscinocera* and *Xyleutes,* by Oberthur, Houlbert and Dodd. This is notable for having what are among the best half-tone plates of insects that we have ever seen. Another feature is the illustration of the habitats of the insects treated, also groups of the native Australians. In many of the recent volumes of his studies he gives pictures of the country and of the places where rare or interesting species have been found.

The Lepidopterists of America should be profoundly grateful to M. Oberthur for his kindness in publishing splendid figures of the Boisduval types of butterflies. Students here were very uncertain as to the identity of a number of species and the generosity of our deceased friend has cleared up some difficult problems. The figures mentioned are in Vol. ix, 1913. He also published figures of American species of butterflies and moths described by other authors here and in Europe.

Several years ago, in the *Etudes,* he published a series of 40 portraits of distinguished Lepidopterists and evidently intended

to continue this interesting collection, had he lived. He has been honored by many Societies, including honorary fellowship of the Entomological Society of London in 1908.

He was a remarkable man of intense enthusiasm for the study of the Lepidoptera and an activity in the work of sixty years is not common. He was an ideal correspondent and always willing to go to any amount of trouble to supply information. He loved all aspects of the study and published some poems on insect life, the work of other authors, that he admired. Many of the papers published in the *Etudes* were by the pens of other persons, but the publisher was the magnet and the guiding star around which they revolved. He was most generous in giving credit to everyone, including the artists.

M. Oberthur was born at Rennes, France, on the 14th of September, 1845, being nearly 79 years old at the time of his decease.

"Priez Dieu Pour Lui."

HENRY SKINNER.

New Muscoid Diptera.

By H. J. REINHARD, Amherst, Ohio.

Frontina ferruginea new species.

♂ Eyes bare. Front at vertex one-third width of head, wider before, cinereous pollinose on the sides, with numerous fine hairs outside of the frontals. Vitta reddish-brown, about one-third width of front, split posteriorly enclosing ocellar area. Ocellar bristles present, directed forward and outward. Frontals in two rows, the three uppermost bristles in each row strong and directed backward, the others weaker, directed inward and decussate to base of antennae, where rows diverge extending downward on sides of face to or slightly below level with arista. No orbital bristles. Posterior orbits, cheeks, facial depression and sides of face, silvery-white. Face receding, sides narrow, bare below lowest frontals. Facial depression large and rather deep, ridges ciliate upward almost to lowest frontals. Vibrissae strong, cruciate, inserted on level with oral margin. Cheeks hairy below, narrow, width about one-fourth the eye-height. Antennae almost as long as face, basal joints yellowish, very short, third joint blackish, elongate, front border practically straight. Arista brownish-black, bare, thickened to middle,

second joint twice as long as broad. Proboscis very short, fleshy, labella large, blackish. Palpi yellow, curved upward, somewhat thickened beyond basal third, bearing short black bristles with several longer hairs on lower surface.

Thorax gray pollinose, with four distinct black vittae, the outer pair interrupted at suture and reduced to triangular spots in front, inner pair narrower, entire, ceasing about midway between suture and base of scutellum. Four post-dorsocentral and four sternopleural bristles. Scutellum black, grayish pollinose, three pairs of marginal bristles, besides a shorter, cruciate, apical pair directed almost vertically.

Abdomen reddish-yellow, with a distinct median black vitta, hind margins of third and fourth segments sometimes blackish. Bases of last three segments white pollinose, elsewhere subshining. Bristles marginal only. Segments one and two, each, with a median pair; three, with a complete row; four, with a sub-marginal row.

Wings hyaline, without costal spine, veins yellow. Third vein with two or three short bristles at base, all others bare. Apical cell open, terminating far before tip of wing. Fourth vein arcuate beyond bend, without stump or wrinkle. Hind crossvein a little curved, slightly approximated to bend of fourth. Calypteres white.

Legs blackish, basal joints and base of femorae sometimes yellowish. Middle tibiae with one large bristle on front edge near middle, hind tibiae outwardly ciliate. Pulvilli and claws short.

Total length 5.5-6.5 mm.

♀. Differs by having two pairs of orbital bristles, second antennal joint longer, third joint shorter and yellowish. Bristles on facial ridges usually not extending as high, and less densely pilose on sides of front outside of frontals.

Type: Male, deposited in the United States National Museum, Washington, D. C. Described from six male and three female specimens, collected at College Station, July, September, 1920, July, 1923 (H. J. Reinhard).

In Coquillett's key this species runs to *rileyi* Will. (*irrequieta* Walk. of authors). It resembles that form rather closely in coloration, but may be readily distinguished by the smaller size, elongate third antennal joint, facial ridges less diverging below, a pair of median marginal bristles on first two abdominal segments, etc.

Oxynops robusta new species.

♀. Black, shining, faintly pruinose. Width of head at vibrissae much shorter than at base of antennae. Eyes large, apparently bare, but with sparse, short hairs. Front at vertex two-thirds the width of either eye, sides shining black above, whitish pollinose below. Vitta velvety, brownish-black, narrowing behind where it divides on each side of ocellar area. No ocellar bristles. Two proclinate and two reclinate fronto-orbital bristles, the latter pair situated in a straight line with the inner verticals, and about equidistant from each other. Outer verticals not developed. Uppermost frontals weak, stronger downward, decussate to base of antennae, and extending on sides of face to apex of second antennal joint. Face slightly wider than front, sides bare, silvery, almost linear below. Facial depression large and deep, whitish, ridges diverging, bristly almost to base of third antennal joint. Vibrissae decussate, inserted on level with oral margin and slightly above lower corner of eye. Antennae almost reaching oral margin, black, basal joints short, front side of third joint straight. Arista black, slender, slightly thickened near base, second joint hardly longer than broad. Cheeks very narrow. Proboscis black, short and fleshy. Palpi black, spatulate, almost reaching tip of proboscis.

Thorax thinly white pollinose, more pronounced anteriorly to suture and on pleurae. Four dorsal vittae apparent anteriorly, obsolete posteriorly to suture. Four post-dorsocentral and two sternopleural bristles. Scutellum black, shining, thickly covered above with short, black erect hairs, marginal bristles three pairs, in addition to a shorter sub-erect apical pair.

Abdomen short, shining black, clothed with recumbent bristly hairs, white pollinose on narrow bases of last three segments. Without discal bristles. Segments one and two, each, with a median pair; three, with a complete row; four, with only short bristly hairs.

Wings considerably longer than abdomen, hyaline, faintly tinged with yellow near base. Costal spine not well developed, all veins yellow, bare, except third which has one or two black bristles near base. Apical cell open, ending shortly before wing-tip. Bend of fourth vein broadly rounded, without stump or fold. Hind crossvein nearly straight, nearer to bend of fourth than to small crossvein. Calypteres distinctly tawny.

Legs black, without strong bristles. Middle tibiae with one bristle on front side beyond the middle, hind tibiae evenly ciliate. Pulvilli very short, claws somewhat longer.

Total length 6.5 mm.

Type: A unique female, collected at College Station, Texas, April 25, 1923 (H. J. Reinhard), deposited in the United States National Museum, Washington, D. C.

Aside from the great disparity in size this species agrees fairly well with the genotype, *nitens* Coq., with the following differences: abdomen pollinose on bases of last three segments, front proportionately wider, no ocellars, four dorsocentrals, etc. In relationship this genus is near *Hypostena* (of Coquillett) and is erected mainly on reproductive and early stage characters.

Pilatea albicincta new species.

♀. Black, densely grayish pollinose. Eyes rather small, bare. Front at vertex nearly the width of either eye, rather prominent before, sides cinereous, practically destitute of weak hairs. Vitta black, occupying one-third width of front, slightly narrower behind, cleft in front of ocelli and extending linearly on either side. Ocellar bristles strong, directed forward and outward. Inner and outer verticals developed, directed backward, the latter about one-half as long as inner pair. Frontal rows diverging at base of antennae, extending downward on sides of face to apex of second antennal joint, upper two bristles in each row before verticals directed backward, others directed inward and decussate to base of antennae. Two pairs of proclinate orbitals present. Face, facial depression, cheeks, and posterior orbits cinereous pollinose. The latter broad below, almost linear at vertex, bordered behind by a fringe of alternating long and short black hairs. Face broader than front, sides moderately wide, bare beneath lowest frontals. Facial ridges diverging, not prominent, with only four or five bristles at the base. Vibrissae strong, cruciate, inserted a little above the front border of oral margin. Cheeks sparsely hairy, width nearly one-half the eye-height. Antennae distinctly shorter than face, basal joints short, yellowish, third joint nearly three times length of second, black, covered with grayish pubescence. Arista brownish-black, practically bare, slender, slightly thickened near base, penultimate joint hardly longer than broad. Proboscis short, labella large and fleshy, yellowish. Palpi yellow, slender, bearing numerous short black bristles and a number of long fine hairs near the middle on the under side.

Thorax gray pollinose, mesonotum faintly brassy, with four distinct vittae. Post-dorsocentral bristles four, sternopleural bristles three, the lowest of which may be hairlike. Scutellum black, densely pollinose except near base, with three pairs of

marginal bristles, the posterior pair divergent, reaching to base of second abdominal segment.

Abdomen somewhat conical, black, first segment faintly pollinose, last three segments with broad whitish cross-bands, narrow hind borders of the intermediate segments sub-shining. First segment with a lateral marginal bristle, and a median marginal pair; second, with a median marginal and discal pair and a lateral marginal one; third, with a discal pair and a row of marginals; fourth with a row of marginals and discals. Median discals erect and asymmetrically placed.

Wings grayish hyaline, veins yellowish, costal spine small. Third vein with three short bristles near base, all others bare. Apical cell narrowly open, ending shortly before wing-tip. Angle at bend of fourth vein broadly obtuse, without fold or wrinkle, vein beyond bend almost straight in approaching the third, curving outward near the tip. Hind crossvein strongly bent inward near the base, distinctly approximated to bend of fourth vein. Calypteres white.

Legs black, basal joints densely pollinose. Middle tibiae with one strong bristle at middle on front side, hind tibiae not ciliate. Claws and pulvilli short.

Total length 7 mm.

Type: A single female, collected at College Station, Texas, April 8, 1921 (H. J. Reinhard), deposited in the United States National Museum, Washington, D. C.

This species differs from *celer* Coq., in having wider cheeks, front more prominent before, parafrontals cinereous. From *unicolor* Tns., it may be distinguished by the wider cheeks, hyaline wings, etc.

Sturmia chrysoprocta new species.

♂. Front prominent, at vertex almost as wide as either eye, sides silvery, clothed with fine black hairs outside of frontal rows. Vitta reddish-brown, distinct, enclosing ocellar area, before ocelli about equal to width of parafrontal. Eyes bare. Ocellar bristles present, proclinate. Outer vertical bristles weakly developed, inner pair and the uppermost frontal in each row strong, directed backward, other frontal bristles directed inward, decussate to base of antennae, where rows diverge extending downward on sides of face to level with arista. No orbitals present. Posterior orbits, cheeks, facial depression and sides of face, silvery on a yellow ground color. Face much wider than front, sides bare, about one-third the width of facial

depression. The latter rather flat, triangular in outline, ridges flattened near base, bearing several irregular rows of short bristles which extend upward to or slightly beyond apex of last antennal joint. Vibrissal angles somewhat approximated (vibrissae broken off near base, the remaining stumps indicate them strong and decussate as usual), inserted slightly above oral margin. Cheeks hairy, width about one-third the eye-height. Antennae two-thirds as long as face, entirely yellow, third joint one and one-half times as long as second. Arista yellowish, bare, short and thickened almost to tip, penultimate joint not longer than thick. Proboscis short, yellowish. Palpi yellow, slender, not thickened beyond base, bearing black bristles.

Thorax black, gray pollinose, with four dorsal vittae. Post-dorsocentral bristles four, sternopleurals four, surrounded by numerous long pilose hairs. Scutellum grayish pollinose, yellow on the apical half, with three pairs of marginal bristles, besides a shorter, sub-erect, cruciate, apical pair.

Abdomen conical, densely clothed with recumbent hairs, faintly pollinose, sub-shining. Last segment yellow, others blackish, venter rufous. Bristles marginal only. Second segment with a lateral pair and median pair; third, with a complete marginal row; fourth, with a sub-marginal row.

Wings normal, without costal spine, grayish hyaline, veins yellow. Apical cell open, ending far before wing-tip. Third vein with three bristles near the base, others bare. Bend of fourth vein rounded, without stump or fold, straight from bend to wing-tip. Hind crossvein slightly bent inward at the middle, much nearer bend of fourth than to small crossvein. Calypteres white.

Legs yellowish, bristly, middle tibiae with two or more bristles on front side near the middle, hind tibiae evenly ciliate. Front pulvilli nearly as long as last tarsal joint. Claws elongate, yellow, tips black.

Total length 9 mm.

Type: A unique male specimen, from Riley County, Kansas (Popenoe), deposited in the United States National Museum, Washington, D. C.

This species is congeneric in the strict sense, with *vanessae* Desv., the genotype. The short wholly yellow antennae will serve to separate it from most of our species in this genus.

The Azalea Leaf Miner (Lepid. : Tineidae).[1]

By F. M. TRIMBLE, Bureau of Plant Industry, Harrisburg, Pa.

(Plate VIII.)

ECONOMIC IMPORTANCE.

The greenhouse azaleas are popular flowering shrubs used extensively for ornamental purposes during the winter months throughout the United States. The young plants are grown in the field, and with the approach of fall are placed in cool greenhouses, from which they are taken to be forced into bloom as needed. During this period they are usually planted in separate pots and kept pruned to some definite shape. These azaleas are also grown in many other parts of the world, and previous to the passage of the Federal Horticultural Board quarantine number thirty-seven, large quantities of many varieties were shipped into the United States from foreign countries.

The azalea leaf miner infests a large percentage of the many varieties and causes a great deal of injury, particularly while being forced in the hot, well lighted greenhouses. In some greenhouses it ranks as the major pest of azaleas, especially in those houses not fumigated regularly.

HISTORY.

The azalea leaf miner was first observed in Holland in 1912 by Prof. Ritzema Bos, who found it infesting large numbers of young plants of *Azalea indica* which had just previously been imported from Japan.

In the winter of 1911 Dr. E. P. Felt, of New York, collected several specimens of this pest on azaleas, and in 1914 Mr. A. Busck described it as *Gracillaria azaleae*. However, Mr. Edward Meyrick in England declared it to be identical with *G. zachrysa* Meyrick, an apple pest of India and Ceylon. Mr. Meyrick corrected this in 1918 by stating that *G. azaleae* Busck was a synonym of *G. azaleella* Brants and was probably a native of Japan, notwithstanding the fact that it is very closely allied to the North American group of *Gracillaria superbifrontella* Clem. and allies.

[1] *Gracillaria azaleella* Brants.

Host Plants.

This Microlepidopteron has not been found, as yet, to have attacked other plants than the varieties of ornamental azaleas and then only seriously injuring those varieties forced in greenhouses such as *Azalea vervaveana, A. hinodegiri, A. grandiflora* and their varieties.

Distribution and Spread.

Since 1911 this leaf miner has been taken in greenhouses throughout Pennsylvania and has been reported many times from other northeastern states and Canada, as well as during port inspection of imported nursery stock.

We may expect to find this pest in any greenhouse where azaleas have been imported in quantities, or where the parent plants are held over from year to year without being properly fumigated. While the azaleas are growing out-of-doors in the summer this small moth readily infests any clean stock nearby with almost the same rapidity as when retained in the greenhouse.

Injury is due to numberless larvae mining the leaves and skeletonizing the infolded tip portions. Such injured leaves turn yellow and soon drop. Under ideal forcing conditions, in a well lighted and heated greenhouse, injury is very rapid and within a few weeks many plants may be completely defoliated. The rate of defoliation depends chiefly on the variety of azalea infested. In comparison *A. hinodegiri* will lose its leaves much more quickly than the larger leaved varieties, such as *A. vervaveana.*

With the smaller-leaved varieties a single larva often webs several leaves together and the plant is soon defoliated by relatively few larvae. In no case were larvae observed to web all the leaves on a terminal into a single chamber, or to mine the terminal twigs. No record of bud injury was found, but it is the effect of defoliation on the buds that causes a loss to the florist. When a large plant is only partly defoliated, that portion without leaves forces its buds open one to two weeks before the uninjured portion (see Plate VIII, fig. 5). This ruins the plant for the trade. It is possible, however, to sell some varieties when heavily budded and yet defoliated, because

under full bloom condition the leaves are practically covered over by the flowers (see Plate VIII, fig. 4).

DESCRIPTION OF THE INSECT.

Eggs. Creamy white in color, oblong, .75 mm. by 1.25 mm. and placed singly on the underside of the leaf close to the mid-rib where they are partially hidden in the pubescence.

Larvae. Full grown larvae are about 19 mm. in length, head usually large, depressed, yellowish, mouth parts well developed and the eyes apparently represented by a large, circular, brown spot. Thoracic legs well developed, thorax yellowish and with the region just above each leg marked by several distinct swellings. Abdomen apodal, yellowish, and with a distinct though irregular fuscous band on the penultimate segment. The newly born larvae are about .75 mm. long and spend approximately one-quarter of the caterpillar stage in a gallery mined between the upper and lower epidermis of the leaf see Plate VIII, fig. 1). Later the larvae emerge and turn over the tips of the leaves, webbing each down with fine silken strands (see Plate VIII, fig. 2).

Pupa. Within a cocoon about 6 mm. long and 2 mm. in diameter, faintly suggesting the *Bucculatrix* cocoon, without distinct longitudinal ribs. The cocoon is a well defined silken structure usually lying longitudinally on the underside of the leaf, protected partially by the curled over tip or lateral margin of the leaf (see Plate VIII, fig. 3). Occasionally they may be found on small twigs wherever a little protection is afforded.

Adult. A small, delicate, close-winged moth with an alar expanse of 11-12 mm. The antennae are as long as the fore-wings and brownish-white. The labial palpi, with the second joint light golden yellow and terminal joint yellowish white with the front of the tip blackish brown, are conspicuous in front of the silvery white face. The head and thorax are light golden yellow mixed with dark purple. The fore-wings are yellowish with large purplish areas and a large yellow costal area beginning at the basal fourth and extending to near the apex, is widest at its basal fourth, but diminishes in width at the middle of the wing and covers less than one-third of the width of the wing. The purplish areas are more or less sprinkled with yellow scales on some specimens and on the costal edge is a series of minute purplish black dots. The hind wings are light pearly gray in color, frail, slender and heavily fringed with long hairs. The abdomen is dark silvery fuscous above and yellowish white beneath. The femora are dark purple in color; tarsi white with narrow black annulations at the joints; tibia of middle legs somewhat thickened with scales.

The adult is only capable of short flights made in a jerky motion and when in a resting position the moth has the forepart of the body raised by the full length of the fore legs with the tip of the abdomen touching the leaf on which the moth is resting. In this position the third pair of legs are held close to the sides of the folded wings and support the weight of the body. The broods overlap extensively and vary in length from three weeks to two and a half months according to the temperature of the surrounding conditions.

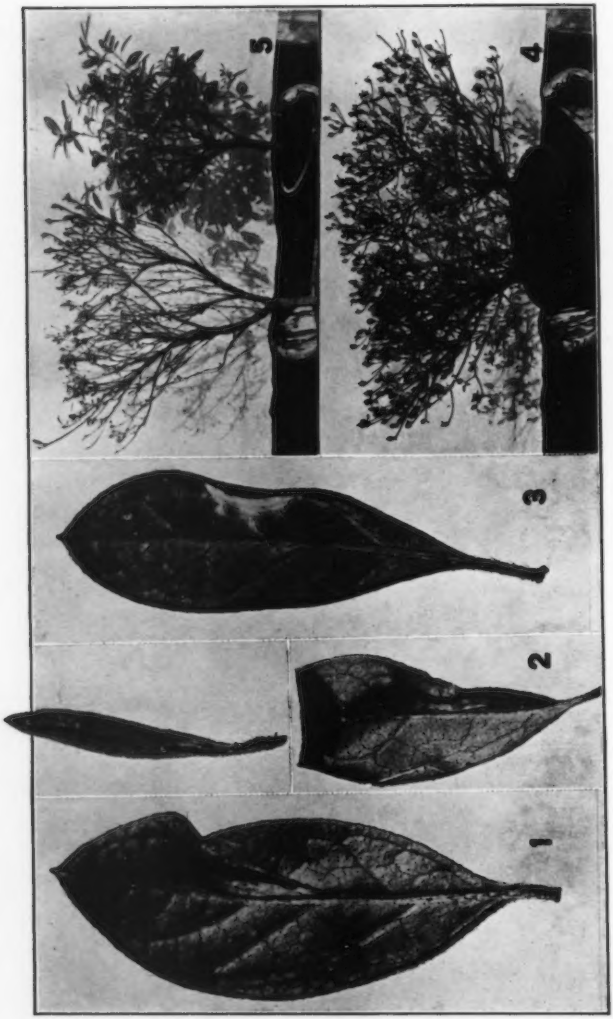
Natural Enemies.

When the azaleas are out-of-doors in the summer the ravages of the leaf miner are checked and it is believed that the varying weather conditions are the chief factors in the destruction of many of the tender larvae and frail adults. However, the writer has observed the larvae of a *Chrysopa* sp. at work killing leaf miner larvae where some agency had previously torn the silk which held over the folded leaf tip. During many rearing experiments only one parasite was found to kill the leaf miner in the greenhouse and Mr. A. B. Gahan, of the U. S. Bureau of Entomology, identified this Chalcid parasite as belonging to the genus *Sympiesis*, closely allied to *S. massasoit* Crawford.

Recommendations for Control.

Stomach poisons and contact insecticides used commonly in controlling greenhouse insects were given thorough trials under varying conditions and none of them gave satisfactory results. In not one count were more than 40% of the larvae killed. This is probably due to the fact that the eggs are well protected among the leaf hairs on the underside of the leaf, the small larvae are in galleries between the upper and lower epidermis of the leaf, and the older larvae are within well made folds of the leaf protected by a wall of silk. Even several hours' immersion in water would not kill the older larvae within their confines.

It was found that thorough fumigation of all plants with hydrocyanic acid gas while being kept in the cool greenhouse, previous to forcing, will kill 90 to 95% of the miners. Then by the use of regular nicotine sulphate fumigations in the forcing greenhouse, on alternate nights, the newly hatched larvae



AZALEA LEAF-MINER AND ITS WORK.—TRIMBLE.

can be quickly killed. In a private greenhouse the removal of all infested leaves by hand would quickly control the pest.

Conclusion.

The loss of leaves on azaleas in the greenhouse and consequent unfitness of the blooming plant for the trade is often due to the azalea leaf miner (*Gracillaria azaleella* Brant).

In the course of thorough investigation it was found that this leaf miner is a native of Japan and was imported into North America on azaleas from Belgium and Holland, where in turn it had been received from Japan on young plants. Fortunately, so far it has remained on its native host plants.

The characteristic injury caused by this insect appears soon after the plants are placed in the greenhouse for forcing. The leaves drop on being mined and skeletonized by the larvae, leaving the azalea a leafless shrub unfit for the trade.

Cyanide fumigation followed later by alternate night fumigations with nicotine sulphate will control the pest.

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Explanation of Plate VIII.

Fig. 1. Ventral side of azalea leaf showing primary gallery.
Fig. 2. Azalea leaves with tip and lateral margins folded.
Fig. 3. Usual location of cocoon on ventral side of leaf.
Fig. 4. Completely defoliated azalea with buds advanced in season. Plants still salable.
Fig. 5. Unsalable defoliated *Azalea vervaveana* compared with uninjured plant.
(Photographs: 1, 2 and 3 by H. B. Kirk; others by the author.)

Milesia in North America (Dipt.: Syrphidae).

By FRANK M. HULL, Ohio State University, Columbus, Ohio.

Several specimens of a *Milesia*, nearly allied to *virginiensis* Drury, but obviously quite distinct, have been in the writer's collection several years, and have attracted his attention to the genus. The species is close to *virginiensis*, but is distinguished by at least three characters that are constant. The scutellum is almost wholly yellow, and with only a very narrow black line basally. Secondly, they differ in the yellow maculation of the thorax, as described below. Lastly, the black transverse markings of the abdomen, and especially those of the second segment, are considerably narrower than in *virginiensis*. The wings are usually more heavily tinged with brown. The species seems to be slightly more southern in distribution.

It was at first thought that the form might be one of the older names listed in the synonomy of its more common ally. A careful examination of these older descriptions, including such as *M. limbipennis* Macq., *M. ornata* Fabr., *M.* (*Sphyxca*) *fulvifrons* Big., etc., fails to reveal any evidence that such is the case. It is rather difficult to obtain any satisfaction from such brief descriptions, but the scutellum of the species is quite distinct, and in the older descriptions, the scutellum where mentioned, is described as in *M. virginiensis*. A brief description of the form, together with a key to the four better known North American species, and notes on others are given below.

Key to Species of North American Milesia

1. Scutellum widely black basally..... 2
   Scutellum almost wholly yellow..... *scutellata* n. sp.
2. Humeral spots not connected with the two median yellow stripes of thorax, or very narrowly so..... 3
   Humeral spots connected by a band with the two median yellow stripes of the thorax; the latter not continuous with the transverse "sutural" band..... *virginiensis* Drury
3. Median pair of yellow thoracic stripes continuous posteriorly, past the middle or "sutural" transverse band of thorax .....*pulchra* Will.
   Median pair of yellow thoracic lines not continuous posteriorly, past the middle or transverse band.....*bella* Town.

Milesia scutellata n. sp.

♂:—Antennae, face and front, golden yellow. Cheeks yellow,

with a black spot basally, on the orbits. Upper half of front and vertex black; lower half of front and occiput, yellow.

Thorax black, marked with yellow, similarly to *virginiensis*, but differing as follows: in that species there are two transverse, medianly interrupted, yellow bands on the thorax, the first between the humeri, the second just behind the suture. The median, broken ends of the humeral band are turned down and drawn out acutely to a point, but never continuous with the sutural or second band of the thorax; in *scutellata* the two bands are broadly connected in the middle, forming thus two U's, their open ends facing outward, laterally. Scutellum almost wholly yellow, with a narrow basal band of black. In *virginiensis*, some two-thirds of the scutellum, basally, are black.

Black markings of the abdomen similar to that species, but narrower. Legs nearly the same. Wings usually more heavily brownish. A trifle smaller than the average *virginiensis*.

♀.—Similar to the male. Front with a black median stripe.

Type male and five male paratypes, from Mississippi Agricultural and Mechanical College, in the author's collection. Two males and one female, from Florida and North Carolina, in the collection of Dr. R. C. Osburn. One female (allotype), from Louisiana, in the Ohio State University collection.

I have examined over two hundred and fifty specimens of the common form, and among them I find the above ten specimens, all of them quite constant. Williston mentions having a specimen from Carolina, similar to what I have described above. He describes the scutellum and abdomen, although he does not mention the bands of the thorax being connected.

The characters here used by the author have been carefully considered and inasmuch as they form two of the principal characters, by which the European species *crabroniformis* Fabr., and type of the genus, is distinguished, they are considered good. In that species the black of the abdomen is largely replaced by obscure reddish, the front of the female is wholly yellow, etc. *M. bella* Town., of this country, likewise has the bands of the thorax connected, as described.

M. pulchra Will. is really as close to *virginiensis*, as is *scutellata*.

Milesia profusa Walk.

This species has not been recognized since it was described. The generic reference of the species is even a little doubtful, as

many of the older authors were in the habit of making *Milesia* a "dumping ground" for species. It was described as only eleven millimeters in length (I have seen *M. virginiensis* that were scarcely longer than this) and the abdomen black with two yellow spots on each side. It is not included in the key.

Milesia bella Townsend.

M. bella Town., Annals and Mag. Nat. Hist., xix, p. 142.

M. mida Moody, Ent. News, xvi, p. 138.

Specimens of this species studied, are from Arizona, in the Ohio State University collection. *M. mida* Moody is, according to Professor J. S. Hine, and Moody himself, a synonym of *M. bella.*

Milesia virginiensis Drury.

This species varies considerably in the breadth of the abdomen, nor is the greater breadth to be found in females only. The average size of the fly is about 20 mm.; they frequently attain a length of 24 mm., and I have three specimens of about 14 mm., length, and correspondingly slender. My material is from New Jersey, Pennsylvania, Ohio, Mississippi, Louisiana, Tennessee, and South Carolina. Also recorded from Nebraska, Wisconsin, Virginia, Florida, Georgia, New England and North Carolina.

Milesia pulchra Will.

Information concerning the species has been drawn from the excellent description and figure to be found in the Biol. Centr. Americana.

Stilobezzia mallochi and Atrichopogon gilva (Dipt.: Chironomidae.)

By W. A. Hoffman, Dept. of Medical Zoology, School of Hygiene & Public Health, Johns Hopkins Univ., Baltimore, Md.

A recent examination of the Ceratopogoninae contained in the National Museum collection brought to light an unnamed specimen that roused my interest. It was readily shown to be conspecific with what Malloch termed *Hartomyia gilva* Coq. This species has been referred to by him first[1] as *Johannseniella,*

[1] Bull. Ill. State Lab. Nat. Hist., vol. X, Article IV, 1914, p. 227.

then as *Hartomyia gilva*[2]; for which the following localities have been given: Ithaca, New York; Swarthmore, Pennsylvania, and Polk County, Wisconsin. At the time he was gathering data relating to the Chironomidae of Illinois, he had no access to the types of Coquillett, which comprise no inconsiderable portion of the described members of this group, insofar as North America is concerned. Therefore, the above-mentioned material was determined as *Hartomyia* (*Ceratopogon*) *gilva*, since the specimens before him corresponded closely to the original description.

A study of Coquillet's type of *Ceratopogon gilva* disclosed the fact that this form must be placed in Kieffer's genus *Atrichopogon*. *Hartomyia* Mall., on the other hand, is synonymous with *Stilobezzia* Kieff. The specimens considered by Malloch represent a new species. Owing to the unavoidable confusion that has arisen, the preferable procedure seems to be naming and describing this form. Mr. Cresson, of the Philadelphia Academy, and Dr. Johannsen, of Cornell University, kindly placed at my disposal two representatives, the one taken at Swarthmore, Pa., having been studied and identified by Malloch. The specimen in the collection of the National Museum, and that in Dr. Aldrich's personal collection, are at present not available.

Stilobezzia mallochi, new species.

♀: Occiput, frons, clypeus, first segment, torus, and basal half of the third segment of antenna yellow. Eyes approximating each other at a point just above vertex. Palpi fumose, the two terminal segments more noticeably so; fourth segment little more than six-tenths the length of terminal one. Proboscis from above a grayish yellow, except the maxillae which are brown. The proboscis equal to the distance from its base to the vertex. Flagellum grayish brown, last five segments approximately equal in length to remainder of antenna. Six segments succeeding torus about equal in size, that is, slightly less than two and one-half times as long as wide; the length of the terminal member more than five times its width. From seventh segment on, more hairs are to be found on the individual segments, especially on the last five, those comprising the basal whorls of each segment, longer.

Greater portion of the mesonotum, shiny, rufous brown, a considerable, more or less square, humeral area creamy yellow.

[2] Ibid., Article VI, 1915, pp. 340 and 343.

Along the medial line runs a row of well separated long black setae. Midway between it and the borders is a pair of similar rows, diverging slightly from the anterior region, being continued along the sides of the prescutellar depression. The courses of the latter are indicated by fine faintly yellow stripes. There is also a pair situated more laterally without the yellow background of preceding, which terminate before the wing bases. Scutellum bright shiny yellow, with a row of nine long black setae following somewhat the contour of the posterior border. Metanotum rufous, glabrous. Apical half of knob of halteres cream color, remainder yellow. Legs long without distinct spines, a uniform yellow, except coxae and knees, which are darker. Hind metatarsus twice the length of second segment. Fourth segment deeply bilobed (as is the case with the two anterior pairs), much shorter than the succeeding segment. The claws are dark brown, unequal in size, the outer member being sickle-shaped, more than twice as long as the inner one, and about equal in length to the fifth segment.

Wing without macrochaetae except a few in apical fifth. Vein R1, its branches, and vein M as far as the crossvein, thick, pale yellowish brown. Vein R4 + 5 (third longitudinal) meeting costal margin a little beyond four-fifths of wing length. Second radial cell two and one-half times length of first. A small basal portion of vein M_2 has virtually disappeared. The forking of Cu is a trifle basad of the lower end of the radio-medial crossvein. The first anal vein nearly attains the lower margin.

Dorsum of abdomen a dirty though not dark grayish brown, scantily set with weak black hairs, those at side a little stronger. Lower and lateral surfaces more or less of an orange shade.

Length of body, 2.5 mm.; of wing, 2 mm.; width of wing, .65 mm.

♂ : In general similar to female. Occiput dark brown. Antennal plumes golden yellow. The setae on the thorax and hairs on the abdomen are on the whole coarser. The hairs on the legs are likewise heavier. Claws subequal, those of hind tarsi three-fifths the length of terminal segment. Vein R4 + 5 attaining costal margin a little before four-fifths of wing length. Second radial cell two and one-fourth times length of first.

Length 2.2 mm.; of wing, 1.88 mm.; width of wing, .58 mm.

Female *type* from Ithaca, New York, July; in Cornell University collection. Male type from Swarthmore, Pa., June 10, 1906 (Cresson); in collection of Academy of Natural Sciences, Philadelphia. The species is dedicated to Mr. J. R. Malloch, of the Bureau of Biological Survey, who has contributed materially to our knowledge of North American Ceratopogoninae.

Odonata from Kentucky.

By H. GARMAN, Lexington, Ky.

This list is based upon collections accumulated incidentally while studying and collecting other insects in the past 30 years during which time the writer has been connected with the Kentucky University and Experiment Station. Kentucky is too hilly and its streams in great part too rapid to afford the best collecting ground for Odonata, but there are regions within the State, notably the bottomland along the Ohio, Mississippi, and other rivers where dragon flies are very numerous and where special effort in collecting would doubtless reveal the presence of many other species. As presented the list is merely a nucleus about which a more complete representation of our fauna may be gathered. Since the State has had but little attention from collectors the records may be of present interest to those giving attention to the distribution of American species. The determined nymphs seem to the writer of special interest because adult dragon flies are likely to be carried by storms long distances from their normal breeding grounds and hence the appearance of an individual or two in a locality may not be very satisfactory evidence as to the habitat of a species.

The arrangement and names used are those of Muttkowski's "Catalogue of the Odonata of North America." Most of the nymphs and part of the adults have been determined by Dr. Philip Garman of the Connecticut Experiment Station.

Additional records, not species, are to be found in Mr. E. B. Williamson's paper in the NEWS for January and February, 1923 (xxxiv, 7-8, 39-40), and in Prof. C. B. Wilson's (Proc. U. S. Nat. Mus. 43, 189-200, 1912), from both of which some quotations have been made below.

ZYGOPTERA.

AGRION ANGUSTIPENNE (Selys).—Kentucky (Hagen, Synopsis of the Odonata of America); (Hagen, Psyche, V, p. 242, Bee Spring, Ky., Mus. Comp. Zool.).

A. DIMIDIATUM (Burm.).—Kentucky (Hagen, Syn. Neur. N. A.; Ky., Hagen, Psyche, V, 245, "Burmeister's Type").

A. MACULATUM Beauv.—Lexington, July 4, 1890; June

14-16, 1892; June 29, 1912; Clear Creek, Pineville, June 16, 1892; Aug. 31, 1911 (nymph).

HETAERINA AMERICANA (Fabr.).—Clay's Ferry, Fayette Co., July 17, 1893.

LESTES DISJUNCTUS Selys.—Lexington.

L. EURINUS Say.—Monticello, Aug. 6, 1918 (Williamson).

L. RECTANGULARIS Say.—Lexington; Indian Cr. Landing, 1911 (Wilson).

ARGIA APICALIS (Say).—Lexington, June 22, 1892; Tyrone, July 14, 1892.

A. FUMIPENNIS (Burm.).—Kentucky (Hagen).

A. MOESTA subsp. PUTRIDA (Hagen).—Straight Cr., Pineville, Oct. 21, 1911 (nymph).

A. SEDULA (Hagen).—Kentucky (C. B. Wilson).

A. TIBIALIS (Rambur).—Obion Cr., Hickman Co., Nov. 2, 1911 (nymph).

A. TRANSLATA (Hagen).—Kentucky (Wilson).

A. VIOLACEA (Hagen).—Lexington, June, 1892; High Bridge, Ky., Aug. 13, 1889.

ENALLAGMA ASPERSUM (Hagen).—Lexington, Aug., 1915 (Philip Garman); Monticello, Aug. 6, 1918 (Williamson).

E. CIVILE (Hagen).—Lexington, Aug. 22, 1889; Oct. 4, 1910; Sept. 17, 1915.

E. EXSULANS (Hagen).—Benson, July 31, 1915.

E. GEMINATUM, Kellicott.

E. SIGNATUM (Hagen).—Lexington, Sept. 26, 1896 (nymph).

NEHALENNIA IRENE (Hagen).—Lexington, June 29, 1916.

ISCHNURA POSITA (Hagen).—Lexington, Aug. 9, 1915; Sept. 3, 1915.

I. VERTICALIS (Say).—High Bridge, Ky., Aug. 13, 1889; Lexington, May 9, 1912 (nymph); Sept. 1 and 15, 1915.

ANOMALAGRION HASTATUM (Say).—Lexington, May 17, 1902; Aug. 28 and Sept. 17, 1915.

ANISOPTERA.

TACHOPTERYX THOREYI (Hagen).—Nat. Bridge, Ky., Aug. 8, 1897; Cumberland Falls, July 5-8, 1911 (C. B. Wilson).

CORDULEGASTER OBLIQUUS (Say).—Kentucky (Hagen).

PROGOMPHUS OBSCURUS (Rambur).—Straight Cr., Pineville, Aug. 29, 1911 (nymph); Parkers Lake, July 9, 1911 (Wilson).

HAGENIUS BREVISTYLUS Selys.—Kentucky (Williamson, Dragonflies of Indiana).

LANTHUS ALBISTYLUS (Hagen).—Ky. (Howe, Proc. Bost. Soc. Nat. Hist., 36, 123, 1921).

L. PARVULUS (Selys).—Ky. (Howe, Proc. Bost. Soc. Nat. Hist., 36, 123, 1921).

GOMPHUS AMNICOLA Walsh.—Dayton, Ky., Chas. Dury (Specimen in New York Museum).

G. CRASSUS Hagen.—Kentucky (Williamson, Dragon flies of Indiana).

G. LINEATIFRONS Calvert.—Kentucky (Williamson).

G. EXTERNUS Hagen.—Kentucky (Hagen).

G. NOTATUS Rambur.—Cumberland Falls, July 5, 1911 (C. B. Wilson).

G. PALLIDUS Rambur.—Cloyd's Landing, Monroe Co., July 23, 1911 (C. B. Wilson).

G. PLAGIATUS Selys.—Burnside (Wilson).

G. SPINICEPS (Walsh).—Greasy Cr., Russell Co., July 17, 1917 (Wilson).

G. VASTUS Walsh.—Indian Cr. Landing, Russell Co., July 18, 1911 (C. B. Wilson).

DROMOGOMPHUS SPINOSUS Selys.—Kentucky (Hagen); Cumberland Falls, Parkers Lake, Burnside, 1911 (Wilson).

BOYERIA GRAFIANA Williamson.—Ky. (Muttkowski).

BOYERIA VINOSA (Say).—Left F. Straight Cr., Cary, Sept. 1, 1911 (nymph); Cumberland R., Pineville, Apr. 26, 1912 (nymph).

BASIAESCHNA JANATA (Say).—Straight Cr., Pineville, March, 1902 (nymph); Aug. 29, 1911 (nymph).

ANAX JUNIUS (Drury).—Sinkhole pond, Lexington, Dec. 16, 1889, and May 7, 1890 (nymphs); Nicholasville, July 19, 1890; Sept., 1922; Pond, Lexington, June 20, 1894 (nymph); Aug. 5, 1905; June, 1918; S. Elkhorn Cr., June 28, 1895 (nymph); Richmond, Sept. 19, 1906; Salt Lick, Sept. 21, 1915.

AESHNA UMBROSA Walker.—Jeffersontown, Aug. 5, 1918.

EPIAESCHNA HEROS (Fabricius).—Lexington, June 2, 1900; May 27, 1908; May 19, 1915; June 28, 1916; April 23, 1920; May 26, 1921; Jackson, Aug. 25, 1913.

DIDYMOPS TRANSVERSA (Say).—Nat. Bridge, Ky., May 9, 1914 (nymph from which adult emerged).

MACROMIA ALLEGHANIENSIS Williamson.—Ky. (Williamson).

M. ILLINOIENSIS Walsh.—Clear Cr., Pineville, June 16, 1892; Green R. between Greensburg and Mammoth Cave, July, 1894 (nymphs); Straight Cr., Pineville, Aug. 29, 1911 (nymphs); Ky. (Williamson).

M. TAENIOLATA Rambur.—Kentucky.

EPICORDULIA PRINCEPS (Hagen).—Burksville, July 30, 1911 (Wilson).

NEUROCORDULIA OBSOLETA (Say).—Cumberland R., Pineville, Aug. 31, 1911 (nymph).

SOMATOCHLORA TENEBROSA (Say).—Parkers Lake, July 9, 1911 (Wilson).

LIBELLULA CYANEA Fabr.—Along Clear Cr., Pineville, June 16, 1892.

L. LUCTUOSA Burm.—Lexington, Aug. 17, 1893; Brooklyn Bridge, Ky., Aug. 6, 1916.

L. PULCHELLA Drury.—Nicholasville, July 19, 1890; Lexington, Sept. 25, 1892; March, 1902 (nymph); Hickman, July 10, Aug. 26 and Aug. 27, 1913.

PLATHEMIS LYDIA (Drury).—Sinkhole pond, Lexington, Oct. 26, 1889, and April 7, 1890 (nymphs); Lexington, May 1, 1890; pond, July 1, 1891; Oct. 30, 1891 (nymph); pond, April 30, 1892 (nymph); Aug. 8, 1893; May 20, 1895; small streams, Aug. 5, 1897 (nymph); Hickman, July 10, Aug. 10 and 20, 1913.

PERITHEMIS DOMITIA (Drury).—Lexington, June 28 and July 1, 1892; July 17 and Aug. 3, 1894; Sept. 1, 1915; Hickman, Aug. 18, 1913.

P. TENERA (Say).—Madisonville, July 24, 1918 (Williamson).

ERYTHRODIPLAX MINUSCULA (Rambur).—Ky. (Hagen); Ky. (Williamson).

ERYTHEMIS SIMPLICICOLLIS (Say).—Nicholasville, July 19, 1890; Lexington, Aug. 17-Sept. 19, 1893; Aug. 19 and Sept. 19, 1915; Hickman, Aug. 26, 1913.

SYMPETRUM RUBICUNDULUM (Say).—Lexington, Sept. 20, 1892; Aug. 31, 1894; Aug. 20, 1904; Oct. 29, 1912; July 17, 1923; Bryan Station, Sept. 4, 1894.

PACHYDIPLAX LONGIPENNIS (Burm).—Nat. Bridge, Ky., July 21, 1912; Hickman, Aug. 26, 1913; Lexington, Aug. 19, 1915.

LEUCORHINIA INTACTA Hagen.—Fishing Cr., Creasy Cr., Indian Cr., Cloyd's Landing, 1911 (Wilson).

CELITHEMIS EPONINA (Drury).—Lexington, Aug. 17, 1893; Hickman, Aug. 18, 1913.

PANTALA FLAVESCENS (Fabr.).—Hickman, Aug. 26, 1913.

P. HYMENAEA (Say).—Cumberland Falls, July 7, 1911 (Wilson).

TRAMEA LACERATA Hagen.—Lexington, Sept. 1, 1890; Madisonville, July 24, 1918 (Williamson).

T. ONUSTA Hagen.—Lexington, May, 1905; Fishing Cr., July 15, 1911 (Wilson); Monticello, Aug. 6, 1918 (Williamson.)

Undescribed Species of the Genus Tanypremna Osten Sacken (Dipt. : Tipulidae).

By CHARLES P. ALEXANDER, Amherst, Massachusetts.

The genus *Tanypremna* is a very characteristic one in the humid tropics of the New World. The genus has been compact and well-delimited, but the accession of two new species has rendered it necessary to divide the genus into three subgenera, two of which are described at this time.

Genus **Tanypremna** Osten Sacken.

1886. *Tanypremna* Osten Sacken; Biol. Cent.-Americana, Dipt., vol. 1:19.

1914. *Tanypremna* Alexander; Journ. N. Y. Ent. Soc., 22: 206-215.

Subgenus **Ceoneura** subgen. n.

Characters as in *Tanypremna*, s. s.; vein M_1 deflected cephalad and fused with vein R_4+_5 for almost its entire length, the free portion of M_1 represented only by a short, apparent cross-vein that closes a rectangular cell R_5 that is about one-half longer than cell *1st* M_2.

Type of the subgenus.—*Tanypremna (Ceoneura) idioneura* sp. n. (Neotropical Region).

Tanypremna (Ceoneura) idioneura sp. n.

General coloration brown, variegated with darker; scutellum broadly whitish medially; pleura yellowish white, narrowly and obliquely lined with dark brown; legs dark brown, tibiæ with a broad, white, sub-terminal ring; tarsi white except the basal three-fifths to four-fifths of metatarsi; wings subhyaline, the costal-region and wing-margin tinged with brown; veins M_1 and R_4+_5 fused, enclosing a rectangular cell R_5 above cell *1st* M_2.

♀. Length 18.4 mm.; wing 10.8 mm.; abdomen alone 15 mm. Described from an alcoholic specimen.

Frontal prolongation of head very short, white; nasus very stout; palpi brown, the second and third segments largely white. Antennae short, the scapal segments pale, the flagellum brown. Vertex pale anteriorly, passing into dark brown behind.

Mesonotal praescutum brown medially, pale yellowish laterally; an indistinct median brown stripe that is crossed transversely by a pale band before mid-length of the sclerite; a capillary brown line extending to the anterior margin of the sclerite; a brown area at the humeral region; scutellum and median area of postnotal mediotergite broadly whitish, margined externally by dark brown, the lateral margins of the sclerite paler brown; postnotal mediotergite dark brown, the lateral

margins pale. Pleura yellowish white with a very narrow brown line running obliquely from the humeral region of the praescutum between the anepisternum and pteropleurite to above the mid-coxae; sternopleurite tinged with brown. Halteres brown, the base of the stem pale.

Legs with the coxae pale, the anterior face of the mid-coxa suffused with brown; trochanters yellow; tibiae dark brown with a conspicuous white ring (1.8 mm.) before the narrower (1 mm.) brown tip; basi-tarsi dark brown, the apical two-fifths (fore legs) to one-fifth (hind legs) pure white; remainder of tarsi pure white, only the terminal segment suffused with brown on its outer half; claws simple.

Wings subhyaline, the apical margin very faintly infuscated; cell *C* hyaline basally, passing into brown distally; cell *Sc* and the small stigma dark brown; veins dark brown. Venation: *Sc* long, Sc_2 extending to beyond mid-length of R_2+_3; cell *2nd* R_1 very small; *Rs* short, straight, shorter than R_2+_3; tip of R_2 persistent; M_1 fused with R_1+_5 at about two-fifths the length of the latter, enclosing a rectangular or elongate cell R_5 above cell *1st* M_2; cell *1st* M_2 pentagonal, narrowed distally; fusion of Cu_1 and M_3 short.

Abdominal tergites dark brown, indistinctly variegated with paler; sternites obscure yellow; ovipositor ferruginous.

Habitat.—British Guiana. *Holotype:* ♀, Kartabo, August 4, 1919 *(A. E. Emerson)*. Type in the collection of Cornell University.

Tanypremna idioneura differs very notably from all the described species in its venation and leg-pattern. In the writer's key to the species of *Tanypremna* (Journ. N. Y. Ent. Soc., 22: 207-208; 1914), the present species would run to the group containing *T. longipes* (Fabricius), *T. longissima* (Enderlein) and *T. manicata* Osten Sacken, differing from all in its diagnostic characters.

Subgenus **Tanypremnodes** subgen. n.

Characters as in *Tanypremna*, s.s., differing chiefly in the structure of the antennae. In the female, the basal four flagellar segments are weakly and irregularly pectinate, on the second the base produced into a slender branch that is nearly as long as the segment; the branch of the third segment is reduced to a small basal serration; fourth segment with a conspicuous basal enlargement only; terminal flagellar segments elongate, with long, conspicuous verticils that become longer distally. Tibial spurs apparently lacking in the unique type. Wings with the distal section of vein R_2 entirely atrophied.

Type of the subgenus.—*Tanypremna (Tanypremnodes) leucoplaca* sp. n. (Neotropical Region).

Tanypremna (Tanypremnodes) leucoplaca sp. n.

General coloration pale brown; head dark orange; femora obscure yellow, the tips conspicuously blackened; tibiae black, the tips broadly white; tarsi black; wings strongly tinged with brownish yellow, the costal region darker brown; veins Sc_1 and R_1 close together at wing-margin.

♀. Length 22 mm.; wing 13 mm.; abdomen alone 18.5 mm.

Rostrum very short, yellow, the elongate palpi pale brown. Antennæ with the scapal segments brownish yellow; flagellum brown. Head dark orange, more saturated behind, somewhat paler in the vicinity of the tubercle.

Mesonotal praescutum pale brown with three yellowish brown stripes that are virtually confluent; remainder of mesonotum yellowish brown, the scutellum darker. Pleura obscure brownish yellow. Halteres dark brown.

Legs with the coxae brownish yellow; trochanters obscure yellow, femora obscure yellow, the tips conspicuously blackened; tibiae black, the extreme base obscure brownish yellow, the tips broadly white, occupying a little less than the apical third of the segment; tarsi black.

Wings with a strong brownish-yellow tinge, the costal region darker brown; stigma very small and vaguely delimited, brown; center of cells *R* and *M* with longitudinal pale centers; veins black, those in the base and costal region brown. Venation: Sc_1 ending close to R_1 at wing-margin; *Rs* relatively short, about two-thirds R_2+_2, oblique; distal section of R_2 entirely atrophied; cell M_1 large, its petiole shorter than *m;* cell *1st* M_2 large, pentagonal; basal deflection of Cu_1 longer than Cu_2 alone; cell *2nd A* of moderate width.

Abdomen dark brown, the caudal margins of the segments somewhat paler; sternites variegated with brown and obscure yellow.

Habitat.—Brazil. *Holotype:* ♀; Upper Rocana, Northern Para, June, 1918 *(S. M. Klages).* Type in the collection of the Carnegie Museum, Accession No. 6175.

This interesting crane-fly was included in extensive series of Tipulidae sent to me for determination by Mr. Kahl, to whom I am greatly indebted for numerous favors. The present species is readily told from all other known species of the genus *Tanypremna* by the broad white tibial tips and the absence of white on the tarsi.

ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., OCTOBER, 1924.

The Monument to J. Henri Fabre.

The monument, for which subscriptions were asked in the NEWS for April last (page 144) was inaugurated at Sérignan, on July 27, 1924, under the presidency of M. Mangin, director of the National Museum of Natural History of Paris, according to a communication from M. H. de la Paillonne, Mayor of Sérignan. A picture postcard of the monument, issued for the occasion, represents Fabre seated on the stump of a tree, his wide-brimmed soft hat on his head, a cane in the right hand, while the left hand, resting on his right thigh, holds a magnifying glass. A. Maillard was the sculptor.

General Catalogue of the Hemiptera.

The trustees of Smith College have agreed to undertake the publication of a catalogue of the Hemiptera of the world, as an item in the celebration of the fiftieth anniversary of the founding of the college. This work will appear in fascicles as the various specialists complete their portions.

At the last meeting of the American Association for the Advancement of Science (Cincinnati, 1923) a group of entomologists interested in the scheme suggested the organization of an editorial board for the catalogue as follows:

General Editor: Dr. G. Horvath, National Museum, Budapest, Hungary.

Managing Editor: Dr. H. M. Parshley, Smith College, Northampton, Mass.

Mr. H. G. Barber, Roselle, New Jersey.
Dr. E. Bergroth, Ekenäs, Finland.
Dr. C. J. Drake, Iowa State College.
Dr. W. D. Funkhouser, University of Kentucky.
Dr. H. B. Hungerford, University of Kansas.
Dr. H. H. Knight, Iowa State College.
Dr. Z. P. Metcalf, North Carolina State College.
Mr. J. R. de la Torre-Bueno, White Plains, New York.

Authorship of certain fascicles has been agreed upon and it

is expected that specialists in various countries will be found to complete the list. Perhaps what has always failed of completion as the effort of one or two authors will succeed as a work of international cooperation. The Latin, French, German, or English languages may be employed by authors. Persons interested in the catalogue are invited to communicate with the managing editor, either directly or through any member of the board.

The fascicles will be sold at a very moderate price, and it is hoped that individuals and institutions will make early indication of their intention (without legal obligation) to subscribe for the whole. Such subscribers will receive each fascicle promptly upon publication and thus assure themselves ultimate possession of the complete work.

H. M. PARSHLEY, Managing Editor, Smith College.

Professor and Mrs. Cockerell Visit the Pacific Islands.

Professor T. D. A. Cockerell wrote from Boulder, Colorado, Sept. 4, 1924: "I had a splendid trip, five weeks in Hawaiian Islands, visited islands of Oahu, Kauai and Hawaii. My wife had a much longer trip, to Tahiti, Rarotonga, New Zealand, Fiji Islands, Tonga Islands, Samoa (three weeks) and Honolulu. The collections we got are not large, but we have some interesting things."

The Occurrence of Eurrhypara urticata Linnaeus (Lepidoptera: Hydrocampinae) in Maine.

I have recently received for identification from Mr. John C. Parlin, Principal of the Freedom Academy, Freedom, Maine, several specimens of Hydrocampine moths, which turn out to be *Eurrhypara urticata* Linnæus. I have in my collection a small series of this pretty moth from Europe, purchased many years ago from the late Dr. Otto Staudinger, at a time when I had asked him to supply me with as complete a collection as possible of the Pyralidæ of Europe. A reference to the Catalog of the Lepidoptera of the Palæarctic Region, by Staudinger and Rebel (1901, pt. II, p. 50), gives the distribution of the species as "Europe (excepting the polar regions and (?Sicily), Asia Minor, Armenia, Western China, Amoorland."

Dyar in his "List of the Lepidoptera of North America" (1902) does not list the species. Barnes and McDonough, in their "Check-List of the Lepidoptera of Boreal America," p. 136, 1917, cite the species, but of course without reference to

locality. I have not had the time to thoroughly search through the entire literature of the subject, but, aside from the last mentioned citation, have failed to discover any reference to the species as occurring in North America. I am informed that on the occasion of a recent visit to the Carnegie Museum during my absence, my friend, Mr. W. T. M. Forbes, stated to Mr. Kahl that the species has been reported from Nova Scotia. The capture of the insect in some numbers during the past summer at Machias, Maine, therefore adds a new locality.

Whether the species has been recently introduced into America, or is indigenous, is a question. Being rather a conspicuous little moth, it appears singular that it should not have been noted long before this time, especially by such careful observers as Fernald, Scudder, Packard and others, who collected extensively in New England. The larva feeds upon nettles.—W. J. HOLLAND, Carnegie Museum, Pittsburgh, Pennsylvania.

Entomological Literature

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

Papers of systematic nature will be found in the paragraph at the end of their respective orders. Those containing descriptions of new genera and species occurring north of Mexico are preceded by an *.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

The titles occurring in the Entomological News are not listed.

2—Transactions of the American Entomological Society, Philadelphia. **4**—Canadian Entomologist, Guelph, Canada. **6**—Journal of the New York Entomological Society. **8**—The Entomologist's Monthly Magazine, London. **9**—The Entomologist, London. **10**—Proceedings of the Entomological Society of Washington, D. C. **11**—Annals and Magazine of Natural History, London. **12**—Journal of Economic Entomology, Concord, N. H. **13**—Journal of Entomology and Zoology, Claremont, Cal. **20**—Bulletin de la Societe Entomologique de France, Paris. **21**—The Entomologist's Record, London. **22**—Bulletin of Entomological Research, London. **26**—Boletin de la Sociedad Entomologica de Espana, Zaragoza. **39**—The Florida En-

tomologist, Gainesville. **49**—Entomologische Mitteilungen, Berlin-Dahlem. **50**—Proceedings of the United States National Museum. **52**—Zoologischer Anzeiger, Leipzig. **55**—The Pan-Pacific Entomologist, San Francisco. **68**—Science, Garrison on the Hudson, N. Y. **69**—Comptes Rendus des Seances de l'Academie des Sciences, Paris. **70**—Journal of Morphology, Philadelphia. **76**—Nature, London. **77**—Comptes Rendus des Seances de la Societe de Biologie, Paris. **78**—Bulletin Biologique de la France et de la Belgique, Paris. **89**—Zoologische Jahrbucher, Jena. **90**—The American Naturalist, Lancaster, Pa. **92**—Archives de Zoologie Experimentale et Generale, Paris. **94**—The American Journal of Science, New Haven, Conn. **98**—Annals of Tropical Medicine and Parasitology, Liverpool. **100**—Biological Bulletin of the Marine Biological Laboratory, Woods Hole, Mass. **104**—Zeitschrift fur Wissenschaftliche Zoologie, Leipzig. **106**—Anales de la Sociedad Cientifica Argentina, Buenos Aires. **108**—Journal of Genetics, Cambridge, England. **118**—Die Naturwissenschaften, Berlin. **119**—Proceedings of the National Academy of Sciences of the U. S. A., Washington, D. C. **134**—Annales de Biologie Lacustre, Brussels. **141**—Internationale Entomologische Zeitschrift, Guben. **144**—Proceedings of the Pacific Coast Entomological Society, San Francisco. **150**—Jenaische zeitschrift fur naturwissenschaft, Jena. **151**—Occasional Papers of the Boston Society of Natural History.

GENERAL. Crampton, G. C.—The phylogeny and classification of insects. **13,** xvi, 33-47. **Davis, W. T.**—Cicada-killing wasps and flies. **6,** xxxii, 113. **Gerhardt, U.**—Versuch einer vergleichenden analyse des mannlichen geschlechtstriebes der tiere. (Zeit. f. d. Ges. Anat., Abt. 3, xxv, 661-95.) **Hanna, G. D.**—Insects in the California tar traps. **68,** lix, 555. **Heikertinger, F.**—Erwiderung an H. H. Karny, betreffend die "Anwendung der nomenklaturregeln." **49,** xiii, 109-10. **Herrera, M.**—Guia para visitar la coleccion de los aracnidos, miriapodos e insectos . . . (Secret. Agr. y Fomento, Mexico, 1923, 200 pp.) **Lovett, A. L.**—Obituary note. **12,** xvii, 421-2. **Lutz, F. E.**—Apparently non-selective characters and combinations of characters, including a study of ultraviolet in relation to the flower visiting habits of insects. (An. N. Y. Ac. Sci., xxix, 181-283.) **MacGillivray, A. D.**—Obituary note. **68,** lix, 503. **Moscher & Holbrook**—A device for inflating larvae. **12,** xvii, 408-11. **Prell, H.**—Ueber das ausschlupfen von insekten aus inada-

quaten kokons. **52,** lix, 241-56. **Reed, C. T.**—Insects simulate birds in flight. (Guide to Nat., xvii, 45.) **Tillyard, R. J.**—Kansas permian insects. Pt. 3, The new order Protohymenoptera. **94,** viii, 111-22. **Turner, C. H.**—An appreciation by A. G. Pohlman. The scientific work of. A list of papers published. By P. Rau. (Trans. Ac. Sc. St. Louis, xxiv, No. 9, 7-18.) **Turner, C. H.**—Tropisms in insect behavior. The psychology of "playing possum." (Trans. Ac. Sc. St. Louis, xxiv, No. 9, 19-26; 46-54.) **Walsh, G. B.**—The passage of apterous insect parasites, etc., from host to host. **8,** 1924. 143-4. **Weiss & West**—The insects and plants of a salt marsh on the costal plain of New Jersey. **6,** xxxii, 93-104.

ANATOMY, PHYSIOLOGY, MEDICAL, ETC. Blunck, u. Speyer—Kopftausch und heilungsvermogen bei insekten. **104,** cxxiii, 156-208. **Bonnier, G.**—Contributions to the knowledge of intra- and inter-specific relationships in Drosophila. (Acta Zool., v, 1-122.) **Bretschneider, F.**—Ueber das gehirn eines barenspinners. (Callimorpha dominula, die jungfer.) **150,** lx, 147-73. **Buys, K. S.**—Adipose tissue in insects. **70,** xxxviii, 485-528. **Christophers, S. R.**—The tracheation and venation of the wing of the mosquito. (Indian Jour. Med. Res., xi, 1103-18.) **Crozier, W. J.**—Wave length of light and photic inhibition of stereotropism in tenebrio larvae. (Jour. Gen. Phys., vi, 647-52.) **Cunningham, J. T.**—Transplantation of heads of insects. **76,** cxiv, 124. **Duncan, C. D.**—Spiracles as sound producing organs. **55,** i, 42-3. **Engel, E. O.**—Das rectum der dipteren in morphologischer und histologischer hinsicht. **104,** cxxii, 503-33. **Geiser, S. W.**—The differential death rate of the sexes among animals, with a suggested explanation. (Wash. Univ. Stud., Sc. Ser., xii, 73-96.) **Hingston, R. W. G.**—The evolution of the faculty of communication in ants. (Rep. Proc. Fifth Ent. Meet., Pusa, 289-95.) **Hollande, A. C.**—Les spirochetes des termites; processus de division formation du schizoplaste. **92,** lxi, 23-34. **Hyde, R. R.**—Inbreeding, outbreeding, and selection with Drosophila melanogaster. **85,** xl, 181-215. **Keilin, D.**—On the appearance of gas in the tracheae of insects. (Pro. Cambr. Phil. Soc., Biol. Sc., i, 63-70.) **Kuhl, W.**—Eine methode zur herstellung von rasiermesserschnitten fur topographische ubersichtsbilder durch ganze insekten beliebiger grosse, ohne vorherige chitinaufweichung. (Zeit. Wiss. Mikroskopie, xl, 369-73.) **Lengerken, H.**—Prothetelie bei coleopterenlarven. (Meta-

thelie.) **52,** lix, 323-30. **de Luna, M.**—Sur la presence d'un ovaire accessoire chez Drosophila melanogaster. **69,** clxxviii, 2274-6. **Mavor & Svenson**—Crossingover in the second chromosome of Drosophila melanogaster in the F_1 generation of X-rayed females. **90,** lviii, 311-15. **Mercier, L.**—Geomyza sabulosa, microdiptere a ailes reduites; perte de la faculte du vol chez cette espece selon le processus drosophilien. **69,** clxxix, 221-3. **Nath, V.**—Cell inclusions in the gametogenesis of Scorpions. **76,** cxiv, 52. **Orlov, J.**—Die innervation des darmes der insekten. (Larven von Lamellicorniern.) **104,** cxxii, 425-502. **Pictet, A.**—La genetique experimentale dans ses rapports avec la variation et l'evolution. (Verh. Schweiz. Naturf. Ges., ciii, 133-68.) **Schulze, H.**—Uber die putztatigkeit von Habrobracon; zugleich ein beitrag zur sinnesphysiologie und psychologie dieser schlupwespe. **52,** lix, 313-23. **Seiler, J.**—Neue ergebnisse der chromosomenforschung. (Vehr. Schweiz. Naturf. Ges., cii, 84-94, 1921.) **Seitz, A.**—Zur phylogenie des insektenstammes. **144,** xli, 21-2. (cont.) **Seurat, L. G.**—Moeurs et evolution d'un Tipulide a larve et nymphe marines. (Bul. Soc. Hist. Nat. Afrique du Nord, 1924, 113-21.) **Tanaka, Y.**—A new sex linked mutation in the silkworm Bombyx mori. (Jour. Dept. Agr., Kyushu Imp. Univ., i, 135-50.) **Tonkov, V.**—Zur mikroskopischen anatomie der rectaldrusen bei den insekten. (Rev. Russe. Ent., xviii, 69-80.) **Weber, H.**—Das grundschema des pterygotenthorax. **52,** lx, 17-37; 57-83. **Wenyon, C. M.**—Microscopic parasites and their carriers. (Pro. R. Inst. Gr. Britain, xxiii, 503-21.) **Wright, W. R.**—On the function of the oesophageal diverticula in the adult female mosquito. **98,** xviii, 77-82. **Zawarzin, A.**—Zur morphologie der nervenzentren. Das bauchmark der insekten. **104,** cxxii, 323-424.

ARACHNIDA AND MYRIOPODA. Barnes, H. F.—On the occurrence of mites on crane-flies. **8,** 1924, 135-7. **Bertin, L.**—Les terrieres des araignees. La Nature, 1924, 330-54. **Chodziesner, M.**—Beitrage zur kenntnis der zecken mit besonderer berucksichtigung der gattung Hyalomma. **89,** xlvii, Syst., 505-72. **Cleaves, H. H.**—Spiders' ballast. (Nature Mag. iv, 48-9.) **Emerton, J. H.**—Recent collections of Canadian spiders. **4,** lvi, 122-4. **Thuringer, J. M.**—A note on migration of myriapoda. **68,** lx, 83.

***Chamberlain, J. C.**—The Cheiridiinae of North Am. **55,** i, 32-40. ***Emerton, J. H.**—New California spiders. **55,** i,

29-31. *Ewing, H. E.—A new mite from the lung sac of a rattlesnake. **10,** xxvi, 179. **Petrunkevitch, A.**—On families of spiders. (An. N. Y. Ac. Sc., xxix, 145-180.)

THE SMALLER ORDERS OF INSECTA. Alverdes, F.—Uber das verhalten von libellen- und eintagsfliegenlarven. **118,** xxviii, 575-6. **Freund, L.**—Zur literatur uber lause (Anoplura). (Naturw. Zeit. Lotos. lxx, 243-47.) **Jucci, C.**—La differenziazione de le caste ne la societa dei Termitidi. (Mem. R. Accad. Naz. Lincei, Cl. Sci. Fis., xiv, 500 pp.) **Klugh, A. B.**—Dragon flies and damsel flies. (Nature Mag., 1924, 107-9.) **Lall, H.**—External genitalia of Lahore dragonflies. (Rep. Proc. Fifth Ent. Meet., Pusa, 369-77.) **Lenz, F.**—(See under Diptera). **Macnamara, C.**—The food of Collembola. **4,** lvi, 99-105. **Samal, J.**—Etude morphologique et biologique de Perla abdominalis. **134,** xii, 229-72. **Stumper, R.**—Une termitiere singuliere. La Nature, 1924, 351-2. **Watson & Hubbell**—On a collection of Thysanoptera from Honduras. **39,** vii, 60-2.

Hood, J. D.—A new Seriothrips injurious to cotton. **4,** lvi, 149-50. **Longinos Navas, R. P.**—Crisopidos de Cuba. **26,** vii, 51-3.

ORTHOPTERA. Koncek, S. K.—Zur histologie der ruckendruse unserer einheimiscen Blattiden. **104,** cxxii, 311-22. **Lucas, W. J.**—Hibernation of Forficula auricularia. **9,** 1924, 140-1. **Rau, P.**—The biology of the roach, Blatta orientalis. (Trans. Ac. Sc. St. Louis, xxv, No. 9, 57-79.) **Rostand, J.**—Sur l'intersexualite chez les phasmes. **77,** xci, 448-9.

Caudell, A. N.—Amblycorypha brachyptera. 10, xxvi, 180.

HEMIPTERA. Fernald, H. T.—Giant water bug attacks trout. (Nature Mag., iv, 49.) **Ferris, G. F.**—The nymphs of two sps. of Chermidae. **55,** i, 24-8. **Patch, E. M.**—The summer food plants of the green apple aphid. (Bul. Maine Agr. Exp. Sta., 313.) **Ringuelet, E. J.**—Contribucion al estudio de la "Pulvinaria flavescens." **106,** xcvii, 61-80.

de Costa Lima, A.—Nota sobre as especies do genero Eucalymnatus. (Coccidae). (Arch. Esc. Sup. Agr. Med. Vet. Nictheroy, vii, 35-42.) **Green & Laing**—Descriptions of some apparently new non-diaspidine Coccidae. **22,** xiv, 415-19. *Hungerford, H. B.—A new Mesovelia with some biological notes regarding it. **4,** lvi, 142-44. *Van Duzee, E. P.—Characters of two No. Am. Chermidae. **55,** i, 22-3.

LEPIDOPTERA. Blackmore, E. H.—L. not previously recorded from British Columbia. Rare and uncommon L. taken in British Columbia during 1923. (Rep. Prov. Mus. N. H., Br. Col., 1923, C, 19-25.) **Burrows, C. R. N.**—Upon the suggested relationships of Psychids. **21,** 1924, 81-5 (cont.) **Ford, L. T.**—Lepidoptera and bats, **9,** 1924, 140. **Shepherd, J.**—Mass production. **9,** 1924, 141-2. **Tulloch, J. B. G.**—The hibernation of Pyrameis atalanta. **9,** 1924, 139. **Wynne, A.**—Lepidoptera and bats. **9,** 1924, 164.

***Barnes & Benjamin**—A new sphingid from Nevada. **10,** xxvi, 166. ***Davis, W. T.**—A northern form of the butterfly Neonympha areolatus. **6,** xxxii, 105-8. ***Hall, G. C.**—Notes on Polygonia j-album, Crecyonis alope, Phyciodes tharos, Heodes epixanthe and Euphydryas gilletti. **6,** xxxii, 109-12. **Lathy, P. I.**—Notes on the genus Agrias. **11,** xiv, 144-56. **Moreau, E.**—Description de Papilio maroni de Guyane Francaise. **20,** 1924, 93-6. **Niepelt, W.**—Neue formen exotischer Rhopaloceren. **141,** xviii, 49-50. **Schaus, W.**—A new moth injurious to cocoanut palm (Limacodidae). **10,** xxvi, 180. **Schaus, W.**—New sps. of moths in the U. S. Nat. Mus. **50,** lxv, Art. 7. ***Skinner & Williams**—On the male genitalia of the Hesperiidae of North America. Paper IV. **2,** 1, 57-74.

DIPTERA. Lenz, F.—Eine konvergenzerscheinung beim gehausebau der Chironomiden- und der Trichopterenlarven. **52,** lx, 105-111. **Melin, D.**—Contributions to the knowledge of the biology, metamorphosis and distribution of the Swedish Asilids, in relation to the whole family of Asilidae. (Zool. Bidr. Fran Uppsala, viii, 1-317.) **Ramachandra Rao, Y.**—The genitalia of certain anthomyiid flies. (Atherigona spp.). (Rep. Proc. Fifth Ent. Meet., Pusa, 330-35.) **Saunders, L. G.**—An unusual case of sexual dimorphism in Ceratopogonine midges. **8,** 1924, 133-4. **Thompson, W. R.**—Recherches sur les dipteres parasites. Les larves des Sarcophagides. **78,** liv, 313-463.

Aldrich, J. M.—A n. g. and sp. of two-winged flies of the family Chloropidae injuring manihot in Brazil. **50,** lxv, Art. 21. ***Allen, H. W.**—Notes on Miltogramminae with descriptions of two n. sps. **151,** v, 89-92. ***Cole, F. R.**—Notes on the dipterous family Asilidae, with descriptions of n. sps. **55,** i, 7-13. ***Curran, C. H.**—A n. sp. of Nothosympycnus with synopsis of Canadian sps. Seven n. sps. of Rhaphium.

(Dolichopodidae). **4,** lvi, 108-10; 133-41. **Enderlein, G.**—Beitrage zur kenntnis der Platystominen. (Mitt. Zool. Mus. Berlin, xi, 97-153.) ***Johnson, C. W.**—A review of the New England species of Chysotoxum. **151,** v, 97-100. ***Malloch, J. R.**—Two new cordylurid flies from the Pacific coast. **55,** i, 14-15. ***Shannon, R. C.**—Change of preoccupied name. **10,** xxvi, 178. ***Van Duzee, M. C.**—A new western Dolichopodid. **55,** i, 43-4. ***Van Duzee, M. C.**—N. sps. of the dipterous family Dolichopodidae. **151,** v, 101-6. **Wheeler, W. M.**—Two extraordinary larval myrmecophiles from Panama. **119,** x, 237-44.

COLEOPTERA. Arendsen Hein, S. A.—Studies on variation in the meal worm, Tenebrio molitor. **108,** xiv, 1-38. **Bondar, G.**—Biologia do genero Collabismus (Curculionidae). (Arch. Esc. Sup. Agr. Med. Vet., Nichtheroy, vii, 23-4.) **Good, H. G.**—Notes on the life history of Prionocyphon limbatus. (Helodidae). **6,** xxxii, 79-84. **St. George, R. A.**—Studies on the larvae of N. A. beetles of the subf. Tenebrioninae with a description of the larva and pupa of Merinus laevis. **50,** lxv, Art. 1.

Barber, H. S.—New Ptiliidae related to the smallest known beetle. **10,** xxvi, 167-78. ***Blaisdell, F. E.**—Studies in the Melyridae. III. **55,** i, 15-21. ***Casey, T. L.**—Additions to the known C. of North America. (Mem. of the Coleoptera, xi, 347 pp.) ***Chittenden, F. H.**—New sps. and var. of Sphenophorus with notes on certain other forms. **10,** xxvi, 145-59. **Csiki, E.**—Coleopterorum catalogus. Pars 77: Serropalpidae, 62 pp. ***Fall, H. C.**—New sps. of North Am. Hydrobiini. **6,** xxxii, 85-92. **Heller, K. M.**—Ein neuer Leptinopterus. (Lucanidae). **49,** xiii, 63-4. **Knisch, A.**—Coleopterorum catalogus. Pars 79: Hydrophilidae, 306 pp. **Olsufiev, G.**—Silphopsyllus desmanae gen. et sp. nn., parasite du rat musque. (Leptinidae). (Rev. Russe Ent., xviii, 81-90.) **Pic, M.**—Melanges exotico-entomologiques. Fasc. 41. ***Swaine, J. M.**—N. sps. of the genus Phloeosinus. **4,** lvi, 144-9. ***Van Dyke, E. C.**—N. sps. and subsps. of Cychrini from western No. Am. (Carabidae). **55,** i, 1-6. ***Wallis, J. B.**—Two n. sps. of Coelambus (Dytiscidae). **4,** lvi, 105-8. **Weise, J.**—Coleopterorum catalogus Pars 78: Chrysomelidae: Galerucinae, 225 pp.

HYMENOPTERA. Hase, A.—Beitrage zur kenntnis des geschlechtslebens mannlicher schlupfwespen. Arb. Biol. Reichs. f. Land-u. Forstw., Berlin, xii, 339-46.) **Plath, O. E.**

—Miscellaneous biological observations on bumblebees. **100,** xlvii, 65-78. **Turner, C. H.**—The homing of the H. (Trans. Ac. Sc. St. Louis, xxiv, No. 9, 27-45.)

Cockerell, T. D. A.—Descriptions and records of bees.—CI. **11,** xiv, 179-85. **Duncan, C. D.**—Dolichovespa diabolica and its supposed var. fernaldi. **55,** i, 40-2. ***Fouts, R. M.**—New bethylid and serphoid parasites from No. Am. **10,** xxvi, 159-66. ***Fouts, R. M.**—Revision of the No. Am. wasps of the subfamily Platygasterinae. **50,** lxiii, Art. 15a. ***Gahan, A. B.**—Some new parasitic H. with notes on several described forms. **50,** lxv, Art. 4. ***Mickel, C. E.**—A revision of the Mutillid wasps of the genera Myrmilloides and Pseudomethoca occurring in America north of Mexico. **50,** lxiv, Art. 15. ***Viereck, H. L.**—Descriptions of new H. in the Canadian Nat. Coll., Ottawa. **4,** lvi, 110-12.

SPECIAL NOTICES.

L'Abeille, Journal d'Entomologie, publie par la Societe Entomologique de France. We note the continuation of this long interrupted journal under the direction of R. Jeannel. It had not been issued since 1914. The present number is No. 1 of Tom. XXXII, and is large octavo size, containing a paper of 160 pp., by R. Jeannel: Revision des "Choleva" Latreille.

Aphididae of Formosa, Part 1-2. By Ryoichi Takahashi. Published by the Agr. Exp. Station, Gov. of Formosa, Taihoku, Formosa. American students may find this work of interest. It is in English; includes notes on many species occurring in North America and other parts of the World. Copiously illustrated with line cuts.

Memoirs of the Coleoptera by Thos. L. Ca. r, Part XI, 347 pp. This part of the well known memoirs contains many descriptions of new forms in several families of this order.

Pan-Pacific Entomologist. Published by the Pacific Coast Entomological Society in co-operation with the California Academy of Sciences. No. 1 of Vol. I has just appeared, and contains many papers describing new North American species, all of which are noted above. The numbers of this new journal are to be issued quarterly, and are intended to supply the need of an organ to represent the entomologists of the west coast region in their special branch of scientific research. The subscription price has been fixed at $2.00 per year, and the support of all entomologists upon the threshhold of the great Pacific region is solicited.

Doings of Societies.

The Fifth Annual Summer Meeting of the Northeastern Entomologists, a section of the American Association of Economic Entomologists, was held at Philadelphia, Pennsylvania, and vicinity on Wednesday, Thursday and Friday, July 30 and 31 and August 1, 1924. Members and others interested gathered in the morning of July 30 at the Japanese Beetle Laboratory, Riverton, New Jersey, inspected the work there, had luncheon at the Riverton Country Club, where they listened to reports by Mr. Loren B. Smith and his associates of the Laboratory, and then visited peach, apple and cherry orchards near by, where excellent opportunity was afforded to witness the attacks of this insect as well as the protection afforded by arsenate of lead spraying against it. The same day at 8 P. M. a joint meeting with the Entomological Section of the Academy of Natural Sciences of Philadelphia was held in the Academy's building, at which addresses were made by the Hon. J. M. McKee, Deputy Secretary of Agriculture of Pennsylvania, President A. F. Burgess on his recent trip to the Pacific Coast and Mr. J. L. King on his experiences in Japan in search of parasites of the Japanese beetle.

On July 31, leaving Frankford, Philadelphia, at 8.30 A. M., visits were made by automobile to the Field Laboratory, Pennsylvania State College at Bustleton, the Fleming farm at Andalusia, the Willow Grove Joint Station of the Federal Bureau of Entomology and Penna. Bureau of Plant Industry, the DeKalb Nurseries, at Penn Square, and the Heyman orchard near West Chester, all in Pennsylvania, viewing various economic entomological projects in operation. Supper was at Westtown, as guests of the Chester-Delaware County Fruitgrowers' Association.

On August 1, proceeding from West Chester, Penna., where most of the party spent the night, via Wilmington, Delaware, and (by ferry) Pennsgrove, New Jersey, to Bridgeton, the peach orchards of the Seabrook Farms were visited for the Oriental peach bud moth, Glassboro for potato injuries and thence to Camden where the party broke up.

This enjoyable and instructive session was planned and guided by Prof. H. E. Hodgkiss and Director C. H. Hadley (Bureau of Plant Industry) for Pennsylvania, and Prof. T. J. Headlee for New Jersey, to whom, and to the speakers mentioned, and those in charge of the various stations and farms, the thanks of the participants are due.

As was widely announced in the daily press and elsewhere, the British Association for the Advancement of Science held

its Ninety-second Annual Meeting in Toronto, Canada, August 6-13. The *Journal of Scientific Transactions* of the sessions, date July 7, 1924, a pamphlet of 107 pages, listed the papers to be presented, many of them accompanied by abstracts. The titles relating to Entomology follow. Presidential address by Maj. Gen. Sir David Bruce on Prevention of Disease (published in *Science* for Aug. 8, pp. 109-124). The following seven were scheduled for Section D. Zoology: F. A. Potts—Intracellular Digestion in Invertebrates; Dr. J. W. Heslop Harrison—On Hybrids between British and Canadian Lepidoptera; A. D. Peacock—Sexuality in the Saw-fly (Pristiphora pallipes Lep.), a study in the evolution of parthenogenesis; Dr. F. A. Dixey—On scent-distributing structures in the Lepidoptera; Prof. A. E. Cameron—Some Tabanidae of Saskatchewan, their parasites and hitherto undescribed pre-imaginal and imaginal stages; Prof. E. M. Walker and Miss Norma Ford—Some features in the anatomy of Grylloblata, a primitive Orthopteroid insect; J. M. Swaine—The factors determining the distribution of North American bark beetles; and the following for Section K. Botany: Dr. J. M. Swaine—Forest protection from insects.

OBITUARY.

PHILIPPE GROUVELLE died August 2, 1923, at the age of 72 years. He was secretary of the Entomological Society of France 1904-1913 and a specialist in Coleoptera. (Bull. of that Society 1923, No. 15.)

JULES GROUVELLE, also a Coleopterist and member of the same society, died November 6, 1923, in his 83rd year. (Bull. cit. 1923, No. 17.)

The death of EDMOND BORDAGE, date not given, was announced at the meeting of the same society on February 13, 1924. He worked for a long time in the laboratories of Alphonse Milne-Edwards and Emile Blanchard in the Museum of Natural History (Paris) and was for some years director of the experimental garden in the Island of Reunion. He published on autotomy and regeneration in the Phasmidae and, under the title *Notes biologiques recueillies a la Reunion,* very varied observations on the instincts of the Spheginae, the habits of Evaniidae and Chalcididae parasitic on certain roaches, descriptions of Coccidae injurious to cultivated plants, acclima-

tation of species foreign to that island, etc. On his return to France, in 1908, he became chef de travaux in the laboratory of evolution, a position which he refused to leave when higher posts more suited to his merits were offered to him. He was not ambitious and preferred a modest situation which permitted him to work in peace. He was an excellent naturalist who published little because he was scrupulous and meticulous, but whose work, which remains entire, is of the greatest interest. (President F. Picard, Bull. cit. 1924, p. 33.)

FREDERICK MERRIFIELD died May 28, 1924, at Brighton, England, at the age of 93 years. Son of a barrister of the Middle Temple and of Mary Philadelphia Merrifield, "a lady of great mental power and versatility, an accomplished naturalist and well known during her lifetime as a leading authority on the Algae, he undoubtedly derived [from her] the love of nature in all its aspects which was characteristic of the whole of his prolonged life." He was called to the bar in November, 1853; in later years he was clerk of the peace for Brighton.

Between 1887 and 1897 he conducted researches on the modification of Lepidoptera when reared under various conditions of temperature and of other surroundings, undertaken in the first instance on behalf of the late Francis Galton. They include the changes which may be induced by heat and cold acting upon the two generations of *Vanessa* (*Araschnia*) *levanaprorsa*. His results were published in the Transactions of the Entomological Society of London and are summarized by Dr. F. A. Dixey in *Nature* for Dec. 23, 1897, pages 184-188, and to a certain extent by himself in his paper *Experimental Entomology. Factors in Seasonal Dimorphism*, read to the First International Congress of Entomology, at Brussels, 1910, and published in the Memoirs thereof (pp. 433-448). Merrifield was President of the Entomological Society of London for 1905 and 1906. (Ent. Mo. Mag., July, 1924.)

DR. DAVID M. CASTLE, well known for his work on Coleoptera, a long-time member of the American Entomological Society and of the Feldman Collecting Social, died in Philadelphia, August 6, 1924. We hope to publish a more extended notice in our next number.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted—American sawflies, Tenthredinoidea, in exchange for other insects, chiefly Coleoptera. Correspondence may be in English. D. Dovnar-Zapolsky, P. O. Box 573, Agricultural Experimental Station, Entomological Section, Rostov on Don, Russia.

Have a number of pamphlets and books on N. A. and exotic Cerambycidae. Will exchange these for certain families of Heteroptera and Tabanidae. G. Chagnon, P. O. Box 521, Montreal, Canada.

Buprestidae.—Will determine and exchange Buprestidae of the world and exchange separata on this family. Dr. Jan Obenberger, Prague II., Václavské námêsti 1700, Museum, Czechoslovakia.

Wanted—Connection with collectors who can furnish me early in the fall living and hibernating pupae of western and southern Papilio and Saturnidae and allied groups. Fertile eggs of Apanteris and Catocala also desired. Max Rothke, 1841 E. Elm St. (R. D. 2), Scranton, Pa.

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